IN THE CLAIMS:

1. (Previously Amended) A method for forming an interlayer insulating film comprising the steps of:

(1) forming a SiO_2 film containing boron, carbon and H_2O on a substrate by plasma enhanced chemical vapor deposition using a source gas containing an Si-C-O-H compound, an oxidative gas and a compound containing boron; and

(2) annealing said SiO_2 film as formed in step (1) while said SiO_2 film is in contact with oxygen gas or an oxygen plasma to release carbon and H_2O from said SiO_2 film, and thereby convert said SiO_2 film into a porous SiO_2 film containing boron.

2. (Cancelled)

3. (Original) A method according to claim 1, wherein an inert gas is added to said source gas.

4. (Original) A method according to claim 3, wherein said inert gas is Ar.

5. (Previously Amended) A method according to claim 1, wherein said annealing is performed by an oxygen plasma.

6. (Previously Amended) A method according to claim 1, wherein a temperature of said substrate for said annealing is higher than the temperature for forming said film containing

boron, carbon and H_2O.

7. (Amended) A method according to claim 1, wherein said Si-C-O-H compound is one selected from the group consisting of compounds designated by a general formula $\underline{Si(OR)_nH_{4-n}}$ ~~$Si(O)R)nH_{4-n}$~~, wherein R =CH_3 or C_2H_5, and n = 1 to 3.

8. (Original) A method according to claim 1, wherein an underlying insulating film is formed on said substrate, and said porous SiO_2 film is formed on said underlying insulating film.

9. (Cancelled).

10. (Cancelled).

11. (Previously Amended) A method according to claim 41, wherein said side wall insulating film is formed by the steps of:

forming said damascene trench and then forming a first insulating film on said interlayer insulating film, on the sides of said damascene trench and on a bottom of said damascene trench; and

anisotropically etching said first insulating film to such an extent that said first insulating film formed on the sides of said damascene trench remains and said first insulating film formed on the bottom of said damascene trench is removed.

12. (Cancelled)

13. (Original) A method according to claim 1, wherein said interlayer insulating film is formed, and then a cover insulating film is formed on said interlayer insulating film.

14. (Original) A method for forming an interlayer insulating film comprising:

a first step of forming a film containing a C-O-H polymer on a substrate by plasma enhanced chemical vapor deposition using a source gas containing an Si-C-O-H compound and H_2; and

a second step of annealing said film, releasing the C-O-H polymer contained in said film from said film, and thereby forming a porous SiO_2 film on said substrate.

15. (Original) A method according to claim 14, wherein said first step and said second step are alternately repeated.

16. (Original) A method according to claim 14, wherein O_2 is added to said source gas.

17. (Original) A method according to claim 14, wherein an inert gas is added to said source gas.

18. (Original) A method according to claim 17, wherein said inert gas is Ar.

19. (Original) A method according to claim 14, wherein said annealing is performed by O

(oxygen) plasma.

20. (Previously Amended) A method according to claim 14, wherein a temperature of said substrate for said annealing is higher than the temperature for forming said film containing the C-O-H polymer.

21. (Original) A method according to claim 14, wherein said Si-C-O-H compound is one selected from the group consisting of compounds designated by a general formula $Si(OR)_nH_{4-n}$ ($R=CH_3$ or C_2H_5, n=1 to 3).

22. (Original) A method according to claim 14, wherein an underlying insulating film is formed on said substrate, and said porous SiO_2 film is formed on said underlying insulating film.

23. (Original) A method according to claim 14, wherein said porous SiO_2 film is formed, and then said porous SiO_2 film is subjected to H (hydrogen) plasma treatment.

24. (Original) A method according to claim 14, further comprising the steps of:

forming said interlayer insulating film on said substrate and then forming a damascene trench in said interlayer insulating film;

forming a side wall insulating film on sides of said damascene trench;

embedding a metal film in said damascene trench; and

forming a barrier metal layer on said metal film.

25. (Original) A method according to claim 24, wherein said side wall insulating film is formed by the steps of:

forming said damascene trench and then forming a first insulating film on said interlayer insulating film, on the sides of said damascene trench and on a bottom of said damascene trench; and

anisotropically etching said first insulating film to such an extent that said first insulating film formed on the sides of said damascene trench remains and said first insulating film formed on the bottom of said damascene trench is removed.

26. (Original) A method according to claim 14, further comprising the steps of:

forming said interlayer insulating film on said substrate and then forming a damascene trench in said interlayer insulating film;

forming a barrier metal layer on the sides and bottom of said damascene trench;

embedding a metal film in said damascene trench; and

forming an anti-oxidizing film on said metal film.

27. (Previously Amended) A method according to claim 14, wherein said interlayer insulating film is formed, and then a cover insulating film is formed on said interlayer insulating film.

Claims 28-39. (Cancelled)

40. (Previously added) A method for forming an interlayer insulating film comprising the steps of:

forming a SiO_2 film containing boron, carbon and H_2O on a substrate by plasma enhanced chemical vapor deposition using a source gas containing an Si-C-O-H compound, an oxidative gas and a compound containing boron;

annealing said SiO_2 film while said SiO_2 film is in contact with oxygen gas or an oxygen plasma to release carbon and H_2O from said SiO_2 film, and thereby convert said SiO_2 film into a porous SiO_2 film containing boron; and

contacting said porous SiO_2 film with a hydrogen plasma.

41. (Previously added) A method for forming an interlayer insulating film comprising the steps of:

forming a SiO_2 film containing boron, carbon and H_2O on a substrate by plasma enhanced chemical vapor deposition using a source gas containing an Si-C-O-H compound, an oxidative gas and a compound containing boron;

annealing said SiO_2 film while said SiO_2 film is in contact with oxygen gas or an oxygen plasma to release carbon and H_2O from said SiO_2 film, and thereby convert said SiO_2 film into a porous SiO_2 film containing boron;

after forming said interlayer insulating film on said substrate, forming a damascene trench in said interlayer insulating film;

forming a side wall insulating film on sides of said damascene trench;

embedding a metal film in said damascene trench; and

forming a barrier metal layer on said metal film.

42. (Previously added) A method for forming an interlayer insulating film comprising the steps of:

forming a SiO_2 film containing boron, carbon and H_2O on a substrate by plasma enhanced chemical vapor deposition using a source gas containing an Si-C-O-H compound, an oxidative gas and a compound containing boron;

annealing said SiO_2 film while said SiO_2 film is in contact with oxygen gas or an oxygen plasma to release carbon and H_2O from said SiO_2 film, and thereby convert said SiO_2 film into a porous SiO_2 film containing boron;

after forming said interlayer insulating film on said substrate, forming a damascene trench in said interlayer insulating film;

forming a barrier metal layer on the sides and bottom of damascene trench;

embedding a metal film in said damascene trench; and

forming an anti-oxidizing film on said metal film.